

CLAIMS

We claim:

1. An ATM apparatus comprising:

at least one computer;

5 at least one output device in operative connection with the computer;

a hardware layer, wherein the hardware layer includes:

a plurality of transaction function devices in operative connection with the

at least one computer, wherein the plurality of transaction function devices

includes at least one cash dispenser; and

10 a plurality of service providers (SPs) operative in the at least one
computer;

an application layer operative in the at least one computer, wherein the application
layer includes at least one user interface application adapted to enable users of the

ATM apparatus to perform transaction functions including the operation of the transaction function devices;

an XFS layer operative in the at least one computer, wherein the at least one user interface application is adapted to control operation of transaction function devices through communication with the XFS layer, wherein the SPs are adapted to control operation of the transaction function devices responsive to communication with the XFS layer;

5 at least one diagnostic application operative in the computer, wherein responsive to communication with the XFS layer the at least one diagnostic application is operative to instruct at least one of the transaction function devices to perform at least one predefined function, and wherein the at least one diagnostic application is operative to determine whether the at least one predefined function was performed successfully and whether a failure to perform the at least one predefined function successfully is likely caused by at least one malfunction 10 associated with the application layer or the hardware layer, and wherein the diagnostic application is operative to cause the computer to output through the at least one output device, at least one message that includes indicia representative 15 of the application layer or the hardware layer which is determined as associated with the at least one malfunction.

2. The apparatus according to claim 1, wherein when the at least one predefined function is performed successfully, the at least one message includes indicia representative that the at least one malfunction is associated with the application layer.

5 3. The apparatus according to claim 2, wherein when the at least one predetermined function performed successfully, the indicia includes an upwardly directed arrow.

4. The apparatus according to claim 1, wherein when the at least one predetermined function is determined not to have been performed successfully, the at least one message includes indicia representative that the at least one malfunction is associated with the hardware layer.

10 5. The apparatus according to claim 4, wherein when the at least one predetermined function is not performed successfully, the indicia includes an downwardly directed arrow.

6. The apparatus according to claim 1, wherein at least one of the transaction function devices includes a first cash dispenser, wherein the SPs include a first cash dispenser service provider software component operatively associated with the first cash dispenser.

15 7. The apparatus according to claim 1, wherein at least one of the transaction function devices includes a card reader, wherein the SPs include a card reader service provider software component operatively associated with the card reader.

8. The apparatus according to claim 1, wherein at least one of the transaction function devices includes a depository mechanism, wherein the SPs include a depository mechanism service provider software component operatively associated with the depository mechanism.

5 9. The apparatus according to claim 1, wherein the XFS layer includes an application interface portion and a hardware interface portion, wherein the application layer communicates with the XFS layer through the application interface portion of the XFS layer, wherein the hardware layer of the ATM communicates with the XFS layer through the hardware interface portion of the XFS layer.

10 10. The apparatus according to claim 1, wherein the application layer includes an ODS layer, wherein the at least one user interface application is operative to communicate with the XFS layer through the ODS layer.

15 11. The apparatus according to claim 1, wherein the hardware layer includes a plurality of UBR components operative in the computer, wherein the SPs communicate with the transaction function devices through the UBR components.

12. An automated banking machine apparatus comprising:

a plurality of transaction function devices, including at least one cash dispenser;

at least one output device;

at least one computer in operative connection with each of the plurality of transaction function devices and the at least one output device;

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at least one application software component operative in the at least one computer;

at least one device associated software component operative in the at least one computer;

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at least one diagnostic software application operative in the at least one computer; wherein the at least one diagnostic software application is operative to cause the at least one computer to carry out at least one test as to whether the at least one device associated software component and at least one transaction function device associated with the at least one device associated software component perform at least one function properly, and to cause the at least one computer to provide at least one

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output through the at least one output device responsive to at least one result associated with the at least one test.